Automotive Service Association

Autobody Craftsman Association

Washington State Auto Dealers Association

Auto United Trades Organization

Washington Automotive Wholesalers

Northwest Tire Dealers Association

Automotive Engine Rebuilders Association

Automotive Engine Rebuilders Association

Production Engine Remanufacturers Association

Nation Automotive Radiator Service Association

A Guide for Radiator Shops

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Washington State Department of Ecology
Hazardous Waste and Toxics Reduction Program
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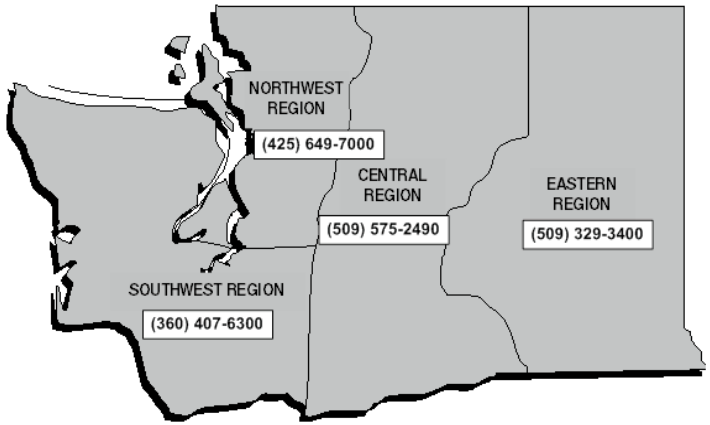
Reduce Waste
printed on recycled paper

The Department of Ecology wishes to recognize the many automotive associations listed on the back cover and the automotive businesses who contributed their time and expertise in creating this booklet.

While this booklet summarizes some of the requirements for generators of automotive waste under the *Dangerous Waste Regulations* (Chapter 173-303 WAC), it does not replace them. Always refer to the regulations themselves for more details or contact the nearest Ecology regional office.



◆ Department of Ecology Regional Offices ◆

Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008
(425) 649-7000

Central Regional Office
15 West Yakima Avenue #220
Yakima, WA 89022-3387
(509) 575-2490

Southwest Regional Office
510 Desmond Drive
P.O. Box 47775
Lacey, WA 98503-7775
(360) 407-6300

Eastern Regional Office
North 4601 Monroe #100
Spokane, WA 99205-1295
(509) 329-3400

◆ Why Should Radiator Shops Pay Attention to Their Wastes? ◆

Radiator shops across the state regularly generate dangerous wastes. Cleaning, rinsing, repairing and other activities in your radiator shop produce dangerous wastes such as spent hot tank solution, dirty rinse water, dirty test tank water and waste antifreeze.

If improperly managed, these wastes may threaten the safety of you and your co-workers, damage the environment, or put your entire community at risk. Dangerous wastes can cause cancer and nerve damage and pollute drinking water supplies.

Your role in protecting public health and the environment is vital. Radiator shop dangerous wastes don't belong on the ground, down the drain or in the dumpster. Good dangerous waste management practices are important for many reasons:

- You will ensure that you're in compliance with dangerous waste regulations and avoid costly penalties.
- You may save money by finding ways to reduce or recycle your wastes.
- You could reduce your regulatory requirements.
- You may gain customers who know they have made a wise choice when selecting a shop that protects the environment.

◆ Radiator Shop Wastes ◆
Practical Do's and Don'ts

Some common wastes generated by radiator shops are described below, along with do's and don'ts for managing them safely and in compliance with the regulations. Make sure you find out what size of generator you are and what responsibilities you have, beginning on page 13.

Antifreeze ◆

If used antifreeze is recycled, it doesn't need to be counted or manifested as a dangerous waste. If used antifreeze is otherwise disposed, it is subject to full regulation, including counting unless the generator can document that the antifreeze is not hazardous.

Do's

✔ Recycle your own antifreeze or use a recycling service.

✔ Drain any remaining antifreeze from radiators into a recycling container.

✔ Consider keeping a separate container for antifreeze that can be reused as a product in your shop without further treatment. Be sure to label this container differently than your waste antifreeze container.

✔ Consider using secondary containment for containers of liquid waste.

✔ Write the words "SPENT ANTIFREEZE" and "TOXIC" on your **waste** antifreeze container.

✔ Keep volumes of used antifreeze low by properly and routinely recycling it.

Don'ts

✘ Don't dispose of waste antifreeze to the sewer.

✘ Don't ever dispose of antifreeze to a storm drain, septic tank, or dry well, and never pour antifreeze on the ground.

✘ Don't mix waste antifreeze with any other waste. Keep it separate.

◆ Where to Get More Help ◆

It's your responsibility to safely manage wastes generated at your facility. Don't be afraid to ask for help. Ecology can help you keep up-to-date and in compliance with the regulations. For additional information and assistance, contact the nearest Ecology Regional Office and ask for a Hazardous Waste Specialist. To access any of the following publications, contact Ecology's Publications Office at (360) 407-7472 or visit Ecology's Web site at *http://www.ecy.wa.gov*

Shoptalk, a quarterly newsletter for hazardous waste generators

Step by Step: Fact Sheets for Hazardous Waste Generators
#91-12, revised 2004

Success Through Waste Reduction - Proven Techniques from Washington Businesses
#90-22

The Dangerous Waste Regulations
(Chapter 173-303 WAC)

Hazardous Waste Services Directory
http://www.ecy.wa.gov/apps/hwtr/hwsd/default.htm

Waste Minimization for Production Painting Operations
#96-405

What is a Small Quantity Generator:
Your Regulatory Status Under the *Dangerous Waste Regulations*
#96-404

***Treatment by Generators* Fact Sheets**
Elementary Neutralization, #96-417

Evaporation Treatment Specific Guidance, #96-414

Separation Treatment Specific Guidance, #96-418

◆ Radiator Shop Dangerous Wastes ◆ by Waste Category

The following table shows where typical radiator shop wastes fall in the state's dangerous waste categories. Your wastes may be different, depending on the chemicals and processes you use. Testing may be necessary to determine whether certain wastes are hazardous.

Major Category	Dangerous Waste Type	Radiator Shop Examples
Listed Wastes	Discarded Chemical Products	not typically generated by radiator shops
	Dangerous Waste Sources	cold tank carb cleaner
		other chlorinated solvents
Characteristic Wastes	Ignitable	solvents
	Corrosive	spent hot tank solution & sludge
	Reactive	not typically generated by radiator shops
	Toxicity Characteristic (TCLP)	spent hot tank solution & sludge
		spent rinsewater & sludge
		glass bead blaster dust
		test tank water
		paint wastes
		lead solder (if not recycled)
Criteria Wastes	Toxic	waste antifreeze
	Persistent	methylene chloride from aluminum parts cleaning
		other solvents with word "chlor" as part of main ingredients

Floor Cleaning Waste Water ◆

Floors in radiator shops should be washed, not swept. Sweeping puts harmful dust and lead into the air. If floors are kept generally clean to begin with and a non-toxic floor cleaner is used, wash water from floor cleaning shouldn't typically be hazardous. However, wash water may contain heavy metals and grease that need to be treated before discharging to the sewer, in order to meet water quality discharge limits.

Do's

✔ Keep your floors clean to begin with. Catch leaks before they hit the floor and place in appropriate waste container.

✔ Clean small, non-chlorinated spills immediately with absorbent. Gather and save for reuse until absorbing ability is gone. It can then go in the dumpster (with local landfill approval).

✔ Receive permission from your local sewer utility for your floor cleaning wastes to enter the sewer.

✔ Consider using mop water as make up water in your hot tank.

Don'ts

✘ Don't use absorbents to clean-up chlorinated solvents and then dispose in the dumpster. These are dangerous wastes.

✘ Don't let floor cleaning waste water go to an outside or inside storm drain, dry well, or septic system.

Check with your sewer utility or city engineering department to find out for sure where your drains lead - most outside drains and some inside drains don't go to a sewage treatment plant, but instead are storm drains that lead directly to a stream, lake or ditch or to drywells which may contaminate ground water.

Paint Wastes ◆

Waste paint may or may not be hazardous, depending on the type and amount. Paint residues such as filters and overspray paper typically are not. If you use a glass bead blaster to remove paint from radiators, dispose of the dust as dangerous waste, unless you have evidence that shows otherwise.

Do's

- ✔ If you use spray cans to paint radiators and you use up the entire can, dispose of it in the dumpster (with local landfill approval).
- ✔ Make sure all other paint containers are empty before disposal. Try to find a scrap metal dealer who will take them.
- ✔ Consider switching to less hazardous water based paints.

Don'ts

- ✘ Don't put glass bead dust, chips/dust residue, or cans that still have product in them, in the dumpster unless you can show these wastes aren't hazardous.

Rinsing and Pressure Washing Waste Water ◆

Once a radiator has been cleaned in a hot tank, any water used to rinse the radiator will contain heavy metals. The same is true of pressure washing dirty radiators. Usually, the concentration of heavy metals in the rinse water make it hazardous and it must be treated to remove heavy metals and other contaminants if it is to be discharged to the sewer. Excess oil and grease are also water quality concerns.

Do's

- ✔ Reuse rinse water by using some kind of closed loop recycling system.
- ✔ Add treated or dirty rinse water as make up water in the hot tank (in which case the rinse water isn't a waste).
- ✔ If you plan to evaporate hazardous rinse water to reduce its weight and volume see discussion on page 10.
- ✔ If any rinse water enters the sewer, get permission from your local sewer utility - for example, if you take radiator cores out of a hot tank and hose them off directly to a sewer drain.
- ✔ Reduce the volume of waste water by using counter-current rinses in a series of tanks.

Don'ts

- ✘ Don't dispose of rinse water down any storm drain, septic system or dry well. This can lead to water contamination and liability problems for you.
- ✘ Don't put rinse water sludge into the dumpster or on the ground.
- ✘ Don't forget to close off any drains leading to storm sewers or dry wells.
- ✘ Don't forget that if you pressure-wash radiators, an oil/water separator may be required in your area. Oil/water separators remove oil only. They do not reduce concentrations of heavy metals.

Step 9 Manifest shipments of Dangerous waste

To ship dangerous wastes off-site, Regulated Generators must prepare a Uniform Hazardous Waste Manifest Form which identifies the contents of the shipment, the transporters used and the permitted facility receiving the wastes. This form accompanies the waste from the site where it is generated to its ultimate resting place and back to you for your records. If you are a Regulated Generator your waste hauler needs to use a manifest and not just issue a bill of lading or receipt.

Some dangerous wastes are restricted from land disposal unless they meet specific treatment standards. If you send your waste off-site for disposal, you must prepare and sign a certification which states that either your waste is not restricted from land disposal, that it meets the treatment standards outlined in the regulations or that further treatment is required. This land disposal restriction certficate is attached to the manifest form for the shipment.

Often the waste hauler fills out these forms and you just sign them. You should carefully check all information before signing.

If a signed return copy of the manifest has not been received from the waste management facility within 35 days of the shipment date, you must try to determine what has happened. Submit an exception report documenting your efforts to Ecology if you have not received the last copy of the manifest form within 45 days of the shipment date.

Step 10 Keep records of Dangerous waste activities

There are a number of records, reports and forms radiator shops must prepare under the Dangerous Waste Regulations and keep on the premises for at least five years, including annual reports, manifest forms, exceptions reports, and land disposal restriction certificates. Keep copies of notification reports (Site ID Form), inspection records, results from waste analyses or tests, and on-site recycling records for as long as you are in business.

STEP 6 PLAN FOR EMERGENCIES

There must be an emergency coordinator on the premises or on call at all times who is familiar with the operations and activities at the site and has the authority to commit the resources necessary to deal with a hazardous waste emergency. In a small shop, this will probably be the owner or manager.

Planning for emergencies can help prevent a small spill from turning into a dangerous and expensive contamination problem. Make sure you train your employees to know how to react to different types of emergencies in your shop.

STEP 7 USE PROPER CONTAINERS AND MANAGE THEM CORRECTLY

Many dangerous waste incidents and work-related injuries are linked to improper or unsafe container management. To avoid these preventable accidents:

- Accumulate your wastes in containers which are sturdy, compatible, leak-proof, properly labeled, and kept closed unless waste is being added or removed;
- Do not accumulate incompatible wastes in the same container or in the same areas;
- Store reactive and ignitable wastes according to the International Fire Code;
- Maintain a minimum aisle space of 30 inches between container rows; and
- Inspect containers and storage areas at least once a week, keeping a log of inspections.

STEP 8 ARRANGE FOR PROPER TRANSPORTATION AND DISPOSAL

As a generator of dangerous waste, you are responsible for following regulations for the safe transportation and disposal of your waste, even after it leaves your premises. Before transporting dangerous waste off-site, you need to make sure it is packaged, labeled and marked in accordance with U.S. Department of Transportation hazardous material regulations. Call (360) 753-6427.

Regulated Generators must hire a transporter that has a RCRA Identification Number and ensure wastes are handled at a permitted dangerous waste treatment, storage or disposal (TSD) facility or at a facility that legitimately recycles or reclaims dangerous waste. Small Quantity Generators can transport their own wastes or make sure they are sent to a:

- permitted dangerous waste facility;
- legitimate recycler;
- facility permitted to handle moderate risk waste; or
- a permitted solid waste facility, if allowed by the local health department.

Do's

✔ Consider rinsing parts over a boil out tank and allow them to drip for at least 10-20 seconds.

✔ Accumulate rinse water sludge in sturdy, closed containers and dispose of as a dangerous waste.

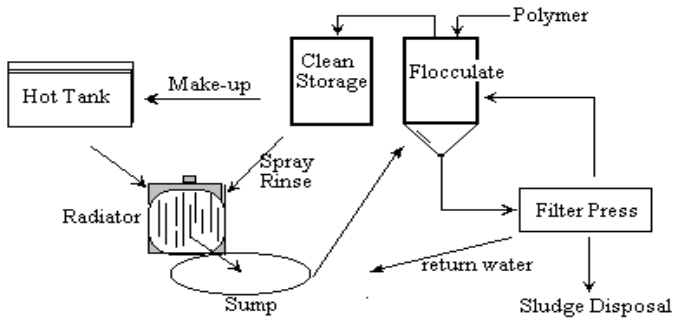
Don'ts

✘ Don't add chemicals or detergents to your cleaning water that allow oil to emulsify and pass through an oil/water separator.

Check with your sewer utility or city engineering department to find out for sure where your drains lead - most outside drains and some inside drains don't go to a sewage treatment plant, but instead are storm drains that lead directly to a stream, lake or ditch or to drywells which may contaminate ground water.

RADIATOR RE-CIRCULATION SYSTEM DIAGRAM

Typical radiator repair shop zero-discharge systems are composed of a sump or water collection basin, a collection and flocculation tank, a clean water storage tank, and a filter press. The process steps go something like this: after a radiator is cleaned in the hot tank (some radiators may skip this step), it is removed and rinsed. (Note: A heated recovery/immersion rinse after the hot tank is a preferred pollution prevention option). The radiator is then rinsed with water from the clean water storage tank. Water is collected in a sump, and then pumped to a cone-bottom flocculation tank. Polymer is added to flocculate partculate, and solids are allowed to settle. Clean water is pumped to a storage tank, and stored for reuse. The solids collected in a cone-bottom tank are transferred to a filter press or sludge dryer, and are then typically managed as hazardous waste. (See below.)



RADIATOR RINSE WATER FLOW SCHEMATIC

Water recycling systems have a number of environmental benefits. Significantly less toxic heavy metals are discharged to the environment. Less water is used, and no liquid waste is released to the environment. Due to reduced flow and less heavy metal content, performance is enhanced at the sewage treatment plant.

Shop Towels

If your shop towels are handled according to the advice below, they do not need to be managed and counted as a dangerous waste. If your towels are being disposed of they are dangerous waste if they fail any dangerous waste tests (ignitable, toxic, etc.) or have listed solvents on them.

Do's

✔ Use cloth towels which can be cleaned and reused.

✔ When possible, use less hazardous cleaning solvents (ones without chlorinated compounds).

✔ See if the laundry/recycling facility you use is meeting local sewer discharge limits. Laundries/recyclers that discharge their waste water to a drain field should be avoided.

✔ Keep waste shop towels in a closed container marked "CONTAMINATED SHOP TOWELS ONLY".

Don'ts

✘ Don't throw dirty towels into your dumpster.

✘ Don't saturate towels. If you do, wring them out and reuse the liquid.

✘ Try not to use disposable paper towels or rags. If you do, see if they designate as a dangerous waste and handle appropriately.

✘ Don't dispose of solvents by pouring them into containers of used shop towels.

Solvent Tanks or Parts Washers

Large amounts of solvents aren't typically used in radiator shops. Solvents used include mineral spirits, Stoddard solvent, petroleum naphtha etc., and they become dangerous wastes the moment the waste service company exchanges the waste tank with a fresh tank. Such spent solvents are typically hazardous because they are ignitable and/or toxic.

Do's

✓ Keep each type of spent solvent in a separate labeled container.

✓ Consider purchasing or leasing a parts washer with a solvent still attached and recycling solvent on site. (Sludges, filters and still bottoms may be hazardous.)

✓ Extend the life of the solvent by topping off the tank from time to time.

✓ Consider using a filter on aqueous tanks and solvent tanks with high suspended solids (diesel carbon).

Don'ts

✗ Don't dispose of spent solvents to drains, the air, or the ground.

✗ Don't mix solvents with used oil or any other waste and keep different types of solvents in separate, labeled, closed containers.

✗ Don't dry parts just cleaned with an air hose. This simply wastes solvent and creates unnecessary VOC's.

✗ Don't use spray cans over solvent tanks. This causes contamination of the solvent in the solvent tank.

Step 3 Report annually

If you have an active RCRA Identification Number, you must submit an annual report (using Ecology's Dangerous Waste Annual Report forms) by March 1 of each year, even if you have not generated waste in that year. Record your dangerous waste activities for the previous calendar year on this report, including how much waste you've generated or accumulated on-site and waste you've sent off-site.

To assist generators, annual reporting is covered at workshops that are typically held at various locations in the state in January and February.

Step 4 Perform preventive maintenance

Dangerous wastes must be handled in a manner that prevents leaks, spills, fires and explosions. Develop and follow a written inspection schedule for all dangerous waste storage areas, containers and tanks and include all emergency, safety and monitoring equipment on-site.

Keep the necessary emergency equipment (such as fire extinguishers and telephones) on hand and accessible to employees. You must regularly test and maintain all your emergency equipment. Notify local authorities (such as police, fire departments and local hospital) of the characteristics of dangerous waste generated at your site, as well as the facility layout and access routes.

Step 5 Properly accumulate Dangerous waste

Radiator shops that generate less than 2,200 lbs. per month or batch can accumulate their dangerous waste for up to 180 days from the date it is first generated before they must manage it on-site or send it to an appropriate facility. Generators of 2,200 lbs. or more per month or batch may only accumulate wastes for 90 days.

While accumulating your wastes, you must follow requirements for safe and proper storage, labeling and management of wastes:

- Establish and clearly mark an accumulation area. Don't have wastes scattered all over your shop, although you may accumulate wastes in satellite accumulation areas as described in -200(2) and in Ecology's Satellite Accumulation Guidance. If constructed after September 30, 1986,your 90/180 day accumulation area must have a containment system, such as a diked concrete area, that is capable of holding leaks and spills.
- Place the waste in an appropriate container and mark it with:
  - the words "Hazardous Waste" or "Dangerous Waste" (some generators find it more convenient to use hazardous waste labels);
  - a label identifying the waste's major risk(s) (for example, "ignitable"); and
  - the accumulation start date (when you first put the waste in the container).
- Comply with the requirements for preventive maintenance, emergency planning and container management summarized in Steps 4, 6, and 7 of the Guide.

STEP 1 IDENTIFY YOUR WASTE AND GENERATOR STATUS

You must determine if any of your wastes are regulated as dangerous wastes by following the "designation" procedures in the *Dangerous Waste Regulations.* First look for each of your wastes on the Discarded Chemical Products and Dangerous Waste Sources Lists in the regulations. This is where you'll find **listed** wastes. Then, if the waste is not on the lists, determine if it exhibits any of the dangerous waste **characteristics** (ignitability, corrosivity, reactivity, TCLP leachability). If the waste is not on the lists, and does not exhibit a characteristic, then generators must evaluate their waste using available data or testing to see if they meet the **criteria** of toxicity or persistence. **Note:** Additional designation for criteria toxicity is required for small quantity generators (generating less than 220 lbs. per month and accumulating less than 2,200 at any time) to determine if a waste that has designated as a dangerous waste with a quantity exclusion limit of 220 pounds will also designate as an extremely hazardous waste, regulated at 2.2 pounds. Additional designation for the criteria of toxicity and persistence is also required in other specific instances, and generators should refer to WAC 173-303-070(5) for further guidance, or contact your nearest Ecology hazardous waste compliance specialist at: Bellevue (425) 649-7000, Olympia (360) 407-6300, Spokane (509) 329-3400 or Yakima (509) 575-2490.

To see how radiator shop wastes fit into the state's different dangerous waste categories, turn to page 18. To determine your generator status, see page 13. To request Step by Step Fact Sheet #1 for more help in designating your wastes, see page 19.

STEP 2 OBTAIN A GENERATOR IDENTIFICATION NUMBER

If you are a regulated generator, you are required to notify Ecology of your dangerous waste activities and obtain a site-specific RCRA Identification Number using a Site ID Form (available from Ecology). Many dangerous waste haulers and management facilities are also required to have an Identification Number. They may not accept your waste if you don't have an Identification Number - even if you're a Small Quantity Generator and aren't legally required to have one.

SOLVENT TANKS AND OTHER SOLVENTS (CONTINUED) ◆

Do's

✓ Have waste hauler exchange the tank only when it is too dirty for further use.

✓ Do remember to keep a log of dates, recycled amounts and batch make-up amounts if you recycle on site.

Don'ts

✘ Don't evaporate solvents as a means of disposal.

SPENT HOT TANK SOLUTION ◆

Whether you're using a boil out tank or an ultrasonic system, spent solution from tanks, as well as the sludge, is typically hazardous due to heavy metal content and its corrosive nature. However, if certain BMP's are met during treatment (evaporation, separation, neutralization) within the process tank, only the remaining sludge needs to be counted toward monthly dangerous waste totals (see page 10).

Do's

✔ Extend "tank" life by pre-cleaning with pressurized water. Make sure the waste water meets your sewer districts limits for grease and heavy metals.

✔ Periodically remove sludge from bottom of tank and recharge the solution.

✔ If you plan to evaporate the solution to reduce weight and volume, see discussion on page 10.

✔ Accumulate all sludge in a closed marked container and dispose of as dangerous waste.

✔ Consider using an ultrasonic tank that requires less cleaning solution. Use the least amount of caustic needed for adequate cleaning.

Don'ts

✘ Don't dispose of spent hot tank solution down any drain or on the ground.

✘ Don't put hot tank sludge into the dumpster or on the ground.

✘ Don't forget to check Ecology's treatment by generator fact sheets (see page 19) if you plan to neutralize and/or separate metals from the solution.

Sump Sludges

Sludges from your sump or oil/water separator may be a dangerous waste. You'll need to test the sludge at a professional laboratory to determine if it is hazardous, or save testing costs and assume it is hazardous and manage it accordingly.

Do's

- ✔ Have the sludge tested when pumped out (see discussion on page 11). Keep records of all tests.
- ✔ If the sludge is a dangerous waste, send it to a dangerous waste management facility.
- ✔ Use a pumping service with an EPA Identification number to pump and transport your sludge.

Don'ts

- ✘ Don't put hazardous sludge in the dumpster or on the ground.
- ✘ Don't use a septic tank pumping service to remove this sludge. There is no legal, environmentally safe way to dispose of the waste if it is hazardous.

Test Tank Water

Test tank water contains heavy metals, such as lead, copper and zinc, often in such high concentrations that the water is hazardous. When test tank water becomes spent you can recycle it in the shop, collect it for disposal by a dangerous waste hauler, or treat it so that it meets local sewer utility limits. However, if certain BMP's are met during treatment (evaporation, separation, neutralization) within the process tank, only the remaining sludge needs to be counted toward monthly dangerous waste totals (see page 10).

Do's

- ✔ Extend the life of your test tank by carefully rinsing the radiator and allowing it to drip over the rinse tank or boilout tank before placing in the test tank.
- ✔ Avoid soldering over the test tank. Bits of solder can fall into the tank and increase the concentration of zinc and lead in the solution. As a result, you would need to replace the tank more often.
- ✔ Reuse the same test tank water after treating it in a recycling system.

Don'ts

- ✘ Don't use a septic tank pumping service to remove the water. There is no legal, environmentally safe way for these services to dispose of the waste if it is hazardous.
- ✘ Don't dispose of test tank water down any storm drain, septic system or dry well. This can lead to water contamination and liability problems for you.
- ✘ Don't put test tank sludge into the dumpster or on the ground.

◆ Your Requirements as a Generator ◆

Radiator shops become Regulated Generators when they generate more than 220 lbs. of dangerous waste per month or batch or ever have more than 2,200 lbs. of dangerous waste on-site. Shops that generate less are Small Quantity Generators. 220 lbs. is about one half of a 55-gallon drum. Answer the following questions about the amount of dangerous waste your shop generates to determine your requirements as a generator. *Remember: Solvents, hot tank solutions and other substances are not wastes until the day they are no longer usable.*

Hot Tank Sludge[1]
(multiply the gallons of each month disposed of X 8) _____ LBS

Waste Antifreeze
(multipy only the gallons each month **not** to be recycled X 9) _____ LBS

Rinsing and Pressure Washing Waste Water
(multiply the gallons of each month disposed of X 8) _____ LBS

Test Tank Slidge[1]
(multipy the gallons of each month disposed of X 8) _____ LBS

Solvent Tanks and other Solvents
(multiply the gallons changed with each month X 8) _____ LBS

Paint Wastes
(pounds of dangerous waste by-products per month) _____ LBS

Sump Sludge
(pound of sludge per month) _____ LBS

Used Solder
(pounds of solder per month not recycled) _____ LBS

Other Dangerous Wastes
(pounds per month) _____ LBS

TOTAL [ ]

If any one answer or combination of answers totals over 220 lbs., you are a Regulated Generator required to meet compliance Steps 1-10 discussed below.

You are a Small Quantity Generator if you always generate less than 220 lbs. of dangerous waste per month or batch and always dispose of the waste before you accumulate more than 2,200 lbs. Small quantity generators are required to comply only with Steps 1 and 8 (and 3 if you already have an active RCRA ID Number).

[1] Used hot tank solution and test tank water **don't** need to be counted if treated in the existing process tank under certain BMP's (see page 10).

◆ Why Not Reduce and Recycle Your Wastes? ◆

Reducing dangerous waste in your radiator shop makes good business sense. Reducing waste, *before* you generate it, can help you to:

- ✔ avoid longterm liability concerns associated with generating dangerous wastes,
- ✔ reduce your regulatory status,
- ✔ save on dangerous waste management costs, and
- ✔ help create a healthier, safer work environment.

It may not be as hard as you think. A good place to start is to walk through your shop and review all of the processes which use toxic chemicals or generate dangerous waste. Pages 2 to 9 in this book will help you determine which wastes are likely to be dangerous.

As you consider each process, ask yourself if you can change the process in some way so that it doesn't produce dangerous waste. Some options to think about are:

Substituting a less toxic raw material

- Use pressurized water for initial preclean instead of caustic jet spray.
- Always ask for a Material Safety Data Sheet (MSDS) before ordering any new product. Biodegradable does not necessarily mean environmentally safe - or that the product is exempt from regulations.
- Switch to a non-lead solder.

Use good operating practices

- Always use funnels or pumps to dispense chemicals.
- Keep all chemicals in sealed containers with tight-fitting lids.
- Set up process tanks next to each other to avoid spills. Use drip boards or pans to catch any excess and divert it back to the original tank.
- Seal floor drains. Do not allow any untreated process solution to enter the sewer.

Change your process

- Use an oil/water separator to keep oil out of sewers.
- Use chemical precipitation to separate metals from solution.
- Consider evaporation systems to reduce the weight and volume of inorganic wastes.

Recycle wastes and waste water which you can't reduce

- Contract for a recycling service to pick up used solvent, used solder and waste antifreeze.
- Reuse spent rinse water as makeup in your hot tank or test tank.

Test Tank Water (continued) ◆

Do's

- ✔ If you plan to evaporate hazardous test tank water to reduce its weight and volume see discussion on page 10.
- ✔ If any test tank water enters the sewer, get permission from your local sewer utility.
- ✔ Check Ecology's treatment by generator fact sheets (see page 19) if you plan to neutralize and/or separate metals from test tank water
- ✔ Don't forget to accumulate test tank sludge in sturdy, closed containers and dispose of as a dangerous waste (or recycle any solder).

Used Solder ◆

Used solder can be recycled as scrap metal. Avoid dropping solder into your test tank. Collect used solder and recycle it through a scrap metal hauler. Don't put used solder in the dumpster or on the ground.

EVAPORATORS

If certain conditions are met, evaporator units designed to reduce the weight and volume of some wastes by removing water are an allowable technology.

To use an evaporator, there are several things you need to do

- Use only inorganic wastes in evaporator units. Inorganic wastes that might be evaporated include spent caustics, rinsewaters and water-based machining coolants.
- Don't use organic solutions, such as solvents, paints or oils in evaporators;
- Leave some water content in the remaining sludge -- don't "over cook" evaporator wastes;
- Dispose of remaining sludge properly -- it will typically be hazardous;
- Include a comment on your Site ID Form that you are a generator evaporating waste;
- Report on your annual report the amounts of dangerous wastes present prior to evaporation and the remaining hazardous sludge.
- Call your local air quality authority to approve evaporator use.

Other things to consider include:
- Incorporating secondary containment around the evaporator to catch a spill;
- Condensing evaporator steam and reusing it in your caustic or rinsewater tanks;

TREATMENT IN PROCESS TANKS

Dangerous wastes generated in process tanks such as spent caustic hot tank solutions, are excluded from dangerous waste requirements until the time they are removed from the tank, provided the following best management practices are followed:

1) The treatment process may not under any circumstances:
   - Generate extreme heat or pressure, fire or explosion, or violent reaction;
   - Produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment;
   - Produce uncontrolled flammable fumes or gasses in sufficient quantities to pose a risk of fire or explosions;
   - Damage the structural integrity of the unit holding the waste; or
   - Through other similar means, threaten human health or the environment.

(continued)

IMPORTANT TOPICS (CONTINUED FROM PAGE 10)

TREATMENT IN PROCESS TANKS (CONTINUED)

2) Generators must ensure that the process tank is compatible with the materials used for treatment and that it is designed to be operated under the treatment conditions.
3) Generators must ensure that employees are familiar with proper treatment procedures, waste treatment residuals handling and emergency procedures relevant to treatment operation.
4) Generators must develop an analysis plan that ensures that the waste is treated in an appropriate, safe manner and that ensures that waste treatment residuals are properly designated.
5) The waste generated in a process tank must be treated or removed within 90 days from the time the tank is taken out of service.
6) If the waste treatment residuals designate as dangerous waste, all treatment residuals must be removed from the tank within 90 days from the time the tank is taken out of service.
7) The resulting treatment residuals must be managed and disposed of in accordance with state and local requirements.
8) The performance standards of WAC 173-303-283(3) apply to generators who treat waste generated in process tanks.

TESTING

Sometimes sending a sample of waste to a laboratory for analysis is the only way to determine if the waste is hazardous. Important tests for radiator shops include those for pH, volatile organics, total petroleum hydrocarbons, and heavy metals. If you test a waste once, and continue to use the same industrial process, you may apply those test results when designating future batches of the same waste. For example, if you test your pressure washing waste water once and find it to be non-hazardous, you may use this knowledge for future disposal of this waste. If you need testing done, request Ecology's Hazardous Waste Services Directory or ask your association for help in locating a reputable lab.

POLLUTION PREVENTION PLANNING REQUIREMENTS

If you generate more than 2,640 pounds of dangerous waste per year (this is an average of 220 lbs/month), you are required to prepare a pollution prevention plan and pay a planning fee. (See page 13 to determine the amount of waste you generate.)

For more information, contact your nearest Ecology waste reduction and recycling specialist at: Bellevue (425) 649-7000, Olympia (360) 407-6300, Spokane (509) 456-2926 or Yakima (509) 575-2490.

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If you need this information in an alternate format, please call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. If you are a person with a speech or hearing impairment, call 711, or 800-833-6388 for TTY.